

Amin Saberi

IDENTIFYING INFORMATION

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EDUCATION

Georgia Institute of Technology, Atlanta, Georgia, USA
Ph.D. in Computer Science (Algorithms, Combinatorics, and Optimization Program)
August 2000-July 2004
Thesis: Algorithmic aspects of the Internet
Advisors: Milena Mihail and Vijay V. Vazirani

Sharif Institute of Technology, Tehran, Iran
B.S. in Computer Science (1996-2000)
Thesis: Design and analysis of approximation algorithms using linear programming
Advisor: Mohammad Ghodsi

PROFESSIONAL EXPERIENCE

**Stanford University, Institute for Computational and Mathematical Engineering
Management Science and Engineering Department**, Stanford, California
Assistant Professor **January 2005 - Present**

Microsoft Research, Theory Group, Redmond, Washington
Consulting Researcher **August 2005, August 2006, July-September 2008, July 2009**
Post-doc **July 2004 - December 2004**

SELECTED AWARDS

1. Alfred P. Sloan Fellowship (2010)
2. Best paper award, ACM-SIAM Symposium on Discrete Algorithms (2010)
3. NSF Career Award, National Science Foundation (2006)
4. Terman Fellowship, School of Engineering, Stanford University (2005)

JOURNAL PUBLICATIONS

1. A. Montanari, A. Saberi, On the Spread of Innovations in Social Networks, to appear in *Proceedings of the National Academy of Science (PNAS)*.
2. C. Borgs, J. Chayes, A. Ganesh, A. Saberi, How to distribute antidote to control epidemics, to appear in *Random Structures and Algorithms*.
3. A. Asadpour, A. Saberi, An Approximation Algorithm for Max-min Fair Allocation of Indivisible Goods, to appear in *SIAM Journal on Computing*.
4. A. Asadpour, U. Feige, A. Saberi, Santa Claus Meets Hypergraph Matchings, to appear in *IEEE Transactions on Algorithms*.
5. M. Bayati, J. H. Kim, A. Saberi, A Sequential Algorithm for Generating Random Graphs with a Given Degree Sequence, *Algorithmica*, 2009.
6. Q. Wang, D. Gleich, A. Saberi, N. Etemadi, and P. Moin, A Monte Carlo method for solving unsteady adjoint equations. *Journal of Computational Physics*, 227(12), 6184-6205, 2008.
7. N. Devanur, C. Papadimitriou, A. Saberi, and V. Vazirani, Market equilibrium via a primal-dual algorithm for a convex program. *Journal of the ACM* 55(5), 1-18, 2008.
8. A. Mehta, A. Saberi, U. Vazirani and V. Vazirani, Adwords and Generalized On-line Matching, *Journal of the ACM*, 54(5), 2007.

9. P. Bahl, M. Hajiaghayi, K. Jain, V. Mirrokni, L. Qiu, and A. Saberi. Cell Breathing in Wireless LANs: Algorithms and Evaluation, *IEEE Transactions on Mobile Computing*, 6(2): 164-178, 2007.
10. M. Mihail, A. Saberi, and P. Tetali, Random Walks with Lookahead in Power Law Random Graphs, *Internet Mathematics*, 3(2), 147-153, 2007.
11. A. Ghosh, S. Boyd, and A. Saberi, Minimizing the Effective Resistance of a Graph, *SIAM Review, problems and techniques section*, 50(1):37-66, 2008.
12. M. Mihail, C. H. Papadimitriou, and A. Saberi, On Certain Connectivity Properties of the Internet Topology, *Journal of Computer and System Science*, 72(2): 239-251, 2006.
13. C. Gkantsidis, M. Mihail, and A. Saberi, Random walks in peer-to-peer networks: Algorithms and evaluation, *Performance Evaluation*, 63(3): 241-263, 2006.
14. V. Markakis and A. Saberi, On the Core of the Multicommodity Flow Game, *Decision Support Systems*, 39(1):3-10, 2005.
15. K. Jain, M. Mahdian, E. Markakis, A. Saberi, and V. Vazirani, A Greedy Facility Location Algorithm Analyzed using Dual-Fitting with Factor-revealing LP, *Journal of the ACM (JACM)*, 50(6), 795-824, 2003.
16. M. Mahdian, E.S. Mahmoodian, A. Saberi, M.R. Salavatipour, and R. Tusserkani, On a conjecture of Keedwell and the cycle double cover conjecture, *Discrete Mathematics* 216, 287-292, 2000.
17. M.T. Hajiaghayee, E.S. Mahmoodian, V.S. Mirrokni, A. Saberi, and R. Tusserkani, On Simultaneous Edge Coloring of Graphs, *Discrete Mathematics*, 216, 267-272, 2000.

BOOK CHAPTERS

1. S. Lahaie, D. Pennock, A. Saberi, R. Vohra, Sponsored Search, book chapter, published in *Algorithmic Game Theory*, edited by Nisan et al., Cambridge University Press, 2007.

PUBLICATIONS IN CONFERENCE PROCEEDINGS

1. A. Asadpour, M. Goemans, A. Madry, S. Oveis Gharan, A. Saberi, An $O(\log n / \log \log n)$ -Approximation Algorithm for the Asymmetric Traveling Salesman Problem, *ACM-SIAM Symposium on Discrete Algorithms (SODA 2010)*.
2. A. Kolla, Y. Makarychev, A. Saberi, S. Teng, Subgraph Sparsification and Nearly Optimal Ultrasparsifiers, *ACM Symposium on Theory of Computing (STOC 2010)*.
3. S. Agrawal, Y. Ding, A. Saberi, Y. Ye, Distributionally Robust Stochastic Programming with Binary Random Variables, *ACM-SIAM Symposium on Discrete Algorithms (SODA 2010)*.
4. A. Montanari, A. Saberi, Convergence to Equilibrium in Local Interaction Games, *IEEE Symposium on Foundations of Computer Science (IEEE Symposium on Foundations of Computer Science 2009)*.
5. A. Asadpour, A. Saberi, On the Inefficiency Ratio of Stable Equilibria in Congestion Games. *Workshop on Internet and Network Economics (Workshop on Internet and Network Economics 2009)*.
6. M. Bayati, A. Montanari, A. Saberi, Generating Random Graphs with Large Girth, *ACM-SIAM Symposium on Discrete Algorithms (SODA 2009)*.
7. S. Ceyhan, E. Mousavi, A. Saberi, Social Influence and Evolution of Market Share, *Workshop on the Economics of Networked Systems (NetEcon 2009)*.
8. A. Saberi, Y. Wang, Cutting a Cake for Five People, *Algorithmic Aspects in Information and Management (AAIM 2009)*
9. M. Bayati, M. Gerritsen, D. Gleich, A. Saberi, Y. Wang: Algorithms for Large, Sparse Network Alignment Problems. *International Conference on Data Mining (ICDM 2009)*
10. H. Nazerzadeh, A. Saberi, and R. Vohra, Dynamic Cost-Per-Action Mechanisms and Applications to Online Advertising, *International World Wide Web Conference (WWW 2008)*.

11. L. Fleischer, R. Garg, S. Kapoor, R. Khandekar, and A. Saberi, A Fast and Simple Algorithm for Computing Market Equilibria, *Workshop on Internet Economics* (Workshop on Internet and Network Economics 2008).
12. A. Goel, M. Mahdian, H. Nazerzadeh, and A. Saberi, Advertisement Allocation for Generalized Second Pricing Schemes, *Fourth Workshop on Ad Auctions*, 2008.
13. A. Asadpour, H. Nazerzadeh, and A. Saberi, Stochastic Submodular Maximization, *Workshop on Internet Economics* (Workshop on Internet and Network Economics 2008).
14. A. Asadpour, U. Feige, A. Saberi, Santa Claus Meets Hypergraph Matchings, (APPROX-RANDOM 2008).
15. Y. Bachrach, V. Markakis, A. Proccacia, J. Rosenschein, and A. Saberi, Approximating Power Indices, *Autonomous Agents and Multiagent Systems* (AAMAS 2008).
16. M. Bayati, J. H. Kim, A. Saberi, A Sequential Algorithm for Generating Random Graphs with a Given Degree Sequence, *11th International Workshop on Randomization and Computation*, (RANDOM 2007).
17. A. Asadpour, A. Saberi, An Approximation Algorithm for Max-min Fair Allocation of Indivisible Goods, *ACM Symposium on Theory of Computing* (STOC 2007).
18. M. Mahdian, H. Nazerzadeh, A. Saberi, Allocating Online Advertisement Space with Unreliable Estimates, *ACM Conference on Electronic Commerce* (EC 2007).
19. T. Feder, H. Nazerzadeh, A. Saberi, Approximating Nash Equilibria with Small-Support Strategies, *ACM Conference on Electronic Commerce* (EC 2007).
20. C. Gkantsidis, G. Goel, M. Mihail, A. Saberi, Towards Topology Aware Networks, *Annual Conference of the IEEE on Computer Communications* (INFOCOM 2007).
21. T. Feder, A. Guetz, M. Mihail, A. Saberi, A Local Switch Markov Chain on Given Degree Graphs with Application in Connectivity of Peer-to-Peer Networks, *IEEE Symposium on Foundations of Computer Science* (IEEE Symposium on Foundations of Computer Science 2006).
22. M. Mahdian and A. Saberi, Multi-unit auctions with unknown supply, *ACM Conference on Electronic Commerce* (EC 2006).
23. B. Codenotti, A. Saberi, K. Varadarajan, Y. Ye, Leontief Economies Encode Nonzero Sum Two-Player Games, *ACM-SIAM Symposium on Discrete Algorithms* (SODA 2006).
24. A. Mehta, A. Saberi, U. Vazirani and V. Vazirani, Adwords and Generalized On-line Matching, *IEEE Symposium on Foundations of Computer Science* (IEEE Symposium on Foundations of Computer Science 2005).
25. C. Borgs, J. Chayes, N. Immerlica, M. Mahdian, A. Saberi, Multi-unit Auctions with Budget-constrained Bidders, *ACM Conference on Electronic Commerce* (EC 2005).
26. N. Berger, C. Borgs, J. Chayes, and A. Saberi, On the Spread of Viruses on the Internet, *ACM-SIAM Symposium on Discrete Algorithms* (SODA 2005).
27. C. Gkantsidis, M. Mihail, and A. Saberi, Hybrid Search Schemes for Unstructured Peer-to-Peer Networks, *IEEE Conference on Computer Communications* (INFOCOM 2005).
28. N. Devanur, N. Garg, R. Khandekar, V. Pandit, A. Saberi, and V. Vazirani, Price of Anarchy, Locality gap and a Network Service Provider Game, *Workshop on Internet and Network Economics* (Workshop on Internet and Network Economics 2005).
29. C. Borgs, J. Chayes, M. Mahdian, and A. Saberi, Exploring the Community Structure of Newsgroups, *ACM conference on Knowledge Discovery and Data Mining* (KDD 2004, short version).
30. D. Lipton, E. Markakis, E. Mossel, and A. Saberi, On Approximately Fair Divisions of Indivisible Goods, *ACM Conference on Electronic Commerce* (EC 2004).
31. C. Gkantsidis, M. Mihail, and A. Saberi, Random Walks in Peer-to-Peer Networks, *IEEE Conference on Computer Communications* (INFOCOM 2004).

32. Milena Mihail, Christos H. Papadimitriou, Amin Saberi, On Certain Connectivity Properties of the Internet Topology, *IEEE Symposium on Foundations of Computer Science* (IEEE Symposium on Foundations of Computer Science 2003), pp 28-35.
33. V. Markakis and A. Saberi, On the Core of the Multicommodity Flow Game, *ACM Conference on Electronic Commerce* (EC 2003), pp 93-97. (best student paper award)
34. K. Jain, M. Mahdian, and A. Saberi, Approximating Market Equilibria, *International Workshop on Approximation Algorithms for Combinatorial Optimization Problems* (APPROX 2003), pp 98-109.
35. C. Gkantsidis, M. Mihail, and A. Saberi, Throughput and Congestion in Power-Law Graphs, *International Conference on Measurements and Modeling of Computer Systems* (SIGMETRICS 2003), pp 148-159.
36. A. Ronen and A. Saberi, On the Hardness of Optimal Auctions, *IEEE Symposium on Foundations of Computer Science* (IEEE Symposium on Foundations of Computer Science 2002), pp 396-405.
37. N. Devanur, C. Papadimitriou, A. Saberi, V. Vazirani, Market Equilibrium via a Primal-Dual-Type Algorithm, *IEEE Symposium on Foundations of Computer Science* (IEEE Symposium on Foundations of Computer Science 2002), pp 389-395.
38. K. Jain, M. Mahdian, and A. Saberi, A New Greedy Approach for Facility Location Problem, *ACM Symposium on Theory of Computing* (STOC 2002), pp 731-740.
39. M. Mahdian, E. Markakis, A. Saberi, and V. Vazirani, A Greedy Facility Location Algorithm Analyzed using Dual-Fitting, *International Workshop on Approximation Algorithms for Combinatorial Optimization Problems* (APPROX 2001), pp 127-137.

PAPERS IN PREPARATION, PREPRINTS

1. S. Oveis Gharan, A. Saberi, Asymmetric Traveling Salesman Problem on Graphs with Bounded Genus, Preprint, 2009.
2. D. Acemoglu, A. Asadpour, C. Borg, J. Chayes, A. Saberi, Two-Dimensional (Frictional) Matching: Equilibrium, Homophily and Mixing, in preparation, 2009.
3. X. Deng, Q. Qi, A. Saberi, On the Complexity of Envy-Free Cake Cutting, Preprint, 2009.
4. N. Berger, C. Borgs, J. Chayes, A. Saberi, A Weak Distributional Limit for Preferential Attachment Graphs, Preprint, 2009.

OTHER PROFESSIONAL ACTIVITIES

| | |
|---|---------------------|
| 6th Workshop on Internet and Network Economics , Program Chair | 2010 |
| Games and Economic Behavior , Guest Editor (2009 special issue) | 2009 |
| Operations Research Letters , Associate Editor | 2009-present |
| Operations Research , Associate Editor | 2009 |
| ACM-SIAM Symposium on Discrete Algorithms (SODA) , Program Committee | 2007 |
| ACM Conference on Electronic Commerce (ACM-EC) , Program Committee | 2005-2010 |
| ACM Symposium on Theory of Computing (STOC) , Program Committee | 2005 |

STUDENTS

Mohsen Bayati (EE, graduated in 2007, co-advised with B. Prabhakar)
 Postdoc in Microsoft Research and Stanford University

Hamid Nazerzadeh (MS&E, graduated in 2009)
 PostDoc researcher in Microsoft Research
 Assistant Professor, University of Southern California, Marshall School of Business
 (starting Fall 2011)

Arash Asadpour (MS&E, graduated in 2010)
 Assistant Professor New York University, Stern School of Business (starting Fall 2011)

Ying Wang (5th year, ICME) to start in Google in Fall 2010

Vahideh Manshadi (5th year, EE)

Simla Ceyhan (4th year, MS&E)

Shayan Oveis Gharan (2nd year, MS&E)